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NEW PRODUCTS AND TECHNOLOGIES FOR MACHINE-TOOL AND TOOL BUILDING

BEGIN MANUFACTURE OF URGENTLY NEEDED CHUCKS -- Moscow, Vechernyaya Moskva,
 9 Jan 53

The Moscow Attachments Plant has begun to manufacture four-jaw chucks for
 pipe cutting machines and pneumatic key (klinovoy) chucks for universal machine
 tools. These chucks are urgently needed by machine tool builders.

TRADE SCHOOL MODERNIZES SCREW-CUTTING LATHE -- Moscow, Moskovskiy Komsomolets,
 11 Jan 53

A modernized screw-cutting lathe has been manufactured at the Omsk Trade
 School No 7.

The conventional T-4A lathe can operate at six different speeds ranging
 from 40 to 800 spindle revolutions per minute. A new-design variable gear has
 been installed in the machine tool, which has increased the range of speed from
 40 to 3,000 revolutions per minute. The variable gear, which was designed at
 the trade school, is simple and inexpensive to manufacture and easy to operate.
 It is controlled by one lever which smoothly changes the speed without stopping
 the machine.

This lathe has other interesting features. It is equipped with a special
 device which checks the size of parts while the machine is in operation.

The Omsk Trade School has also equipped the machine with a small and con-
 venient special instrument which determines the ability of the cutter to with-
 stand the resistance of the rotating part. Usually, the strength of the cutter
 has to be measured in a laboratory with a bulky instrument.

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MANUFACTURE LARGE CHECKING AND MEASURING AUTOMATIC FOR BEARING INDUSTRY --
Moscow, Moskovskaya Pravda, 18 Feb 53

The Moscow Kalibr Plant has completed the manufacture of a large checking and measuring automatic for the bearing industry. It was designed by the Bureau of Interchangeability of the Ministry of Machine Tool Building.

The automatic is intended for checking outer rings of roller bearings to an accuracy of 0.001-0.002 millimeter. It releases one ring every 20 seconds after having checked 21 dimensions. At the same time it sorts the rings. An automatic meter counts accepted and rejected items.

DEVELOP NEW INSTRUMENTS FOR DETERMINATION OF WEAR -- Moscow, Vechernyaya Moskva, 28 Feb 53

At one of the laboratories of the Institute of Machine Studies of the Academy of Sciences USSR, a new method has been developed for accurate determination of wear of machine parts. Original instruments designed at the laboratory are used for this purpose. Each instrument has a miniature rotating diamond tool and a specially designed microscope for use in measuring. Small indentations, 1.0-1.5 millimeters long, are made in predetermined places on the surface of a shaft journal. Their length is measured with the aid of a microscope. After a certain period of operation, a measurement of the length of the indentations is made again. The amount of wear can be determined by the difference in length of each indentation measured. In this way, the wear of a part can be determined in different places along its friction surface.

The wear of engine cylinders, piston pins, piston rings, machine beds, and other important machine parts can be determined by this same principle.

Tests of new instruments, which were conducted at branch institutes and plants, have shown the expediency of introducing the instruments into practice.

REPLACE BRONZE PARTS WITH FERROUS METAL -- Kiev, Pravda Ukrainy, 8 Feb 53

Ordinarily, bronze worm gears are used in semiautomatic multitool lathes bearing the "Ordzhonikidze" trade mark /Moscow Machine Tool Building Plant imeni Ordzhonikidze/. Workers at the Khar'kov Tractor Plant have found that bronze gears in these machine tools wear out very quickly. They suggested that bronze gears be replaced with hardened steel gears. Whereas bronze gears last 3 months, steel gears will last 6 months and even longer.

At one shop of the tractor plant, bronze worm gears on flat-lapping machines have been replaced with steel gears.

Bronze bushings are used in a large number of gear hobbing and spline milling machines. A great deal of bronze goes into their manufacture and therefore they wear out very rapidly. At the tractor shop, the bushings have been replaced with /ferrous metal/ bearings.

Bronze parts on other machine tools are also being replaced with ferrous metal at the tractor plant. Where parts made entirely of ferrous metal are unsuitable, parts combined /of different metals/ are used.

INTRODUCE NEW TECHNOLOGIES AT TOOL PLANT -- Moscow, Moskovskaya Pravda, 18 Feb 53

For the first time under production conditions, cold treatment of parts has been widely introduced at the Moscow Tool Plant. Until now, in the final stage of heat-treatment, that of annealing, the tools has been heated in electric furnaces.

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Instead of placing the items in a furnace, they are now placed in a chamber of a special unit in which a temperature of minus 70-80 degrees centigrade is created. In durability and cutting properties, the tools treated in this way are not inferior to those heated in furnaces. The time for processing tools has been cut 10-12 times as compared with the conventional method, and in one year, the enterprise will save approximately 200,000 kilowatt hours of electric power.

A precision casting shop has been created at the plant. The application of this new technology will save a great deal of alloy steel. In addition, it will enable Stakhanovites to speed up the output of most complex tools.

A young worker at the plant received an assignment to process a series of broaches in a certain length of time for the Vladimir Tractor Plant. Using advanced methods of operation, he put out 17 broaches in one shift instead of three, which is the norm for Stakhanovites.

REVEALS TRUE MEANING OF THERMOCORUNDUM -- Minsk, Sovetskaya Belorussiya,
4 Jan 53

G. Yakovlev, docent, candidate of technical sciences, stated the mineral-ceramic blades used in high-speed machining of metal are usually called thermocorundum. [This material has also been called microlite.]

COMPARE COST OF CERAMIC CUTTERS WITH COST OF HARD-ALLOY CUTTERS -- Minsk,
Sovetskaya Belorussiya, 18 Feb 53

Ceramic (microlite) cutters cost approximately 170 times less than cutters made of hard alloy.

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